

CLEVELAND COUNTY BEEKEEPERS ASSOCIATION

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Cleveland County, NC

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Pollination and the Issues

2013

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Pollination and the issues involving pollination are very complex. Our April field meeting demonstrated this. The honey bees on the trailer at Bill Ware's apiary near Grover had just been removed from peaches. The bees worked the blossoms intensely gathering mostly nectar but earlier in the day pollen. The anthers, the male flower parts of peach blooms shed pollen readily. Please see the picture and caption. Also peach varieties are self fertile meaning that the pollen from the flower can fall on the stigma of the same flower and result in a viable fruit being set. Since a peach fruit contains only one seed in reality only one pollen grain is needed. The usual situation is for too many peaches to set and the farmer has to thin. So a peach farmer does not rely on honey bees but the peach crop can indeed benefit us as beekeepers. Fortunately most of our farmers realize the overall importance of honey bees and do not treat with an insecticide when their crop is in bloom. At times fungicides are used and some of our researchers are finding residues in pollen that can be detrimental to honey bee health. Towards the end of the day the pollen is already shed and no longer available to bees. If the peach farmer delays treating the crop till this time hazards will be reduced, even if the bees are still collecting nectar. This is because the nectar is inside the bloom and somewhat enclosed by the other flower parts and the fungicide will not be readily absorbed and taken to the hives as residues.



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At the Grover site blueberries, muscadine grapes and asparagus were being produced by the farmer, Jason Rhodes. The blueberry planting was less than 10 acres. Bill and I did not see any honey bees working the blueberries but we did see some bumblebees. I researched this and discovered that bumblebees are considered a more efficient pollinator for blueberries. Indeed this crop is dependent on insect pollination since the pollen unlike that of peaches is "sticky" and does not readily shed from the flower, ie. it has to be carried by the pollinator. Also unlike the peach, the blueberry fruit has multiple seed. Jason's planting obviously has not exceeded the population of the bumblebees in the area to get the job done. The bumblebee population along with other wild pollinators is referred to as the background pollinator level. Another reason the bees seemingly were ignoring the blueberries was because of the nectar flow in the surrounding area. The wild cherries had just started to bloom as had the yellow poplars and even white clover.



I talked to Don Hopkins about blueberries and honey bees and he pointed out that yes, North Carolina blueberry farmers do pay for pollination services. However the bulk of our state's commercial blueberries are planted in larger acreages that exceed that background pollinator's ability to do the job. Also the area of the state that the majority of blueberries are grown typically does not have the intense nectar flow we have in this area in April. There are lots and lots of pines and in places very little else. Further complicating the issue with blueberries is the fact that some varieties produce much more nectar than others and are therefore more attractive to pollinators.

Jason's muscadines are another example of a crop that sheds pollen readily and most varieties now are self fertile. So honey bees are not rented by the producers.

Now for the unlikely crop to need honey bees; asparagus. The part harvested on asparagus is not even a fruit, not the result of pollen falling on or being transferred to the the stigmas (the female flower part.) Please read the caption and see why all things considered Jason's asparagus crop would not have been possible without honey bees.

I do need to add into our discussion that for the blueberries, peaches and muscadines plant propagation is not done by seeds, all are done vegetatively by grafting, rooting, etc. Also see the photo and caption of the honey bee forager on live oak.

Indeed pollination is a complicated subject. We as beekeepers need to know the details and work with farmers to better fine tune their insecticide and fungicide use so hazards to our bees can be reduced even further.



A honey bee working a peach blossom getting nectar. The male flower parts on this particular bloom has shed all of its pollen. Compare this to the blossom in the lower left corner. Note the pinkish color of the anthers indicating that pollen has not completely shed.

May Meeting Announcement

This month's meeting will be held on **May 20, 2013 @7:00PM.**

The meeting will be held at the:

Extension Auditorium and The Honey House

(behind the Extension Office)

130 S. Post Road

Shelby, NC 28152

(Go to the Auditorium first)

Topics:

Using the Honey House for:

Extraction and Bottling

Hope to see everyone there!



A honey bee working an asparagus bloom. Note the orange pollen load. Since the part of the plant harvested is the vegetative growth, insect pollinators are not needed in production fields. However honeybees are used for the production of seed for nearly all commercial varieties. For seed production, pollen must be transferred from plants of one of the parent varieties to the other parent variety. These seed are used to produce the plants that farmers use.



A honey bee working the anthers of a live oak. No nectar is available on these flower parts but it is obvious the pollen is prized by bees since the loads are huge.



A carpenter bee working a blueberry blossom. However the bee is not doing any cross pollination because it is accessing the nectar by puncturing the side of the bloom, thereby not coming into contact with the male and female flower parts. The honey bee quickly learns to use these punctures and access nectar and therefore not serving a purpose for pollination.

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